

Appendix B-8

LAKE TAHOE RESTORATION PROJECTS ESTIMATED DIRECT COSTS & KEY MILESTONE DATES

Project Name: Manual Control of Noxious Weeds Agency: U.S. Forest Service, LTBMU
 Prepared by: Cecilia Reed Phone: (530) 543-2761 #: 10184
 SNPLMA Project#: EIP

Identify estimated costs of eligible reimbursement expenses:

1. Planning, Environmental Assessment and Research Costs – data collection & monitoring

	\$	10,000	8.3	%
2. FWS Consultation —Endangered Species Act	\$			
3. Direct Labor (Payroll) to Perform the Project - seasonal staff \$15,000 each, \$10,000 towards Noxious Weed Coordinator	\$	40,000	33.3	%
4. Project Equipment -tools, software, specialized equipment, portable washing station (~\$40,000), etc.	\$	45,000	37.5	%
5. Travel -including per diem where official travel status required to carry out project, such as serve as COR, experts to review reports, etc.	\$	1,500	1.3	%
6. Official Vehicle Use - pro rata cost for use of Official Vehicles when required to carry out project (rental truck ~\$7000)	\$	7,000	5.8	%
7. Cost of Contracts, Grants and/or Agreements to Perform the Project	\$			%
8. Other Direct and Contracted Labor: Agency payroll, GIS specialist, Forest Botanist and subject experts to review contracted surveys, designs/drawings, plans, reports, etc	\$	2,100	1.8	%
9. Other Necessary Expenses (See Appendix B-11)	\$	14,400	12	%
TOTAL:	\$	120,000	100	%

Estimated Key Milestone Dates:

Milestones/Deliverables:	Date:
Survey 100 acres & manually treat 50-75 acres	November 1, 2009
Annual report	February 31, 2010
Project Closeout Date	September 31, 2010

**APPENDIX K
LAKE TAHOE CAPITAL PROJECT PROPOSAL
ROUND 9**

Consistency with Lake Tahoe nomination criteria:

Project nominations must qualify as an Environmental Improvement Program (EIP) project and be the responsibility of the federal government (federal share responsibility); and have a willing and ready federal sponsor.

Project nominations must be consistent with one of the focus areas in the June 2006 Federal Vision (pp. 8-9) (<http://www.fs.fed.us/r5/lbmu/documents/lbmc/revise-FV-Final.pdf>) and fit into at least one category.

Capital Focus Area (2006 Federal Vision): Watershed and Habitat Improvement

Circle a minimum of one category:

Circle is shown with ()

1. Continued emphasis on fuels reduction in coordination with projects funded under the 2006 SNPLMA amendment (the "White Pine" amendment).
- (2.)** Continued implementation of projects approved in Rounds 5 through 8 which implement the EIP. Project proposal should clearly describe the phase/product being produced along with the consequence of not completing the project phase proposed for Round 9.

List project(s): Manual Efforts for Noxious Weeds, Projects (Round 6:F054, Round 7:F081, & Round 8) EIP 10184

3. Project is consistent with and contributes toward TMDL pollutant reductions within the four source categories (atmospheric, urban & groundwater, forested uplands, and stream channel).

List category(ies): Consistent with all categories and contributes to a reduction in TMDL pollutants within urban & groundwater, forested uplands, and stream channels

- (4.)** Control of aquatic invasive species and prevention of new aquatic invasive species.

Project Name: Manual Control for Noxious Weeds	EIP #: 10184
Lead Agency: Lake Tahoe Basin Management Unit	Contact: Cecilia Reed
Threshold: Vegetation	Phone Number: (530) 543-2761
Threshold Standard: v-1 and v-2	Email Address: ccreed@fs.fed.us
Funding Requested in this Round: \$120,000	Total Project Cost: \$644,000 through R12

Project Summary (maximum 200 words): (applicable ONLY to this Round 9 project):

The purpose of this project is to reduce noxious weed infestations throughout the Lake Tahoe Basin (Basin) with manual control efforts. This will include hiring a seasonal crew and purchasing equipment to manually treat known infested weeds sites on National Forest Systems lands. All of the infestations are treated manually, either by clipping, digging, or pulling. Each site will be monitored and treated at least once with the objective of visiting all sites a second time to provide follow-up treatment. Data such as infestation size and percent cover will be recorded at each site and tracked from previous

year's records. On average we treat 90 acres of gross area each year, but we have seen a steady reduction because of our past efforts and plan to treat 70 acres in 2009 (see attached chart).

Detailed Project Description (focuses on what Round 9 is funding; list the number of years or phases the Round 9 requested funding will cover; if phased, briefly describe how this project links into previously phased projects including what remains for Rounds 10 and beyond).

Invasive species have been identified as the second greatest threat to the health of the nation's forests and grasslands. They pose a serious threat to biological diversity because of their ability to displace native species, alter nutrient and fire cycles, decrease the availability of forage for wildlife, and degrade soil structure.

FY08 represents the sixth year of the invasive weed program on the Lake Tahoe Basin Management Unit (LTBMU). Each year, a full-time employee has coordinated the weed program and one to three seasonal employees have been hired to conduct the "on the ground" work, which consists of treatments and monitoring. To date, all treatments have been mechanical and consisted of pulling, clipping, and digging. Future plans will include the use of wash stations to clean equipment and vehicles of noxious weed particles before entering or leaving National Forest Systems lands within the LTBMU. This will help prevent introductions of noxious weeds to un-infested areas and reduce the spread of noxious weeds.

The LTBMU weed coordinator meets with the Lake Tahoe Basin Coordinated Weed Group (LTBWCG), which has representation from agencies, land managers, and residents in the Basin. In addition, a number of educational outreach activities are conducted, some of which have included: staffing a table at Earth Day; creating handing out various noxious weed brochures; staffing and organizing weed pull events with other agency personnel and volunteers; posting Eurasian water milfoil signs at all Forest Service Marinas; meeting with marina operators on future plans for wash stations at boat launches and to educate them on clean practices to reduce spread of aquatic invasive weeds; and organizing a "Weed Warrior" training for Forest Service employees.

Over the past four years, the weed coordinator on the LTBMU has been conducting invasive weed surveys of the gravel pits that import fill into the Basin. These surveys have been successful in raising awareness of noxious weed issues, reducing the introduction of noxious weeds to National Forest System lands, as well as making the gravel pit companies accountable for controlling noxious weeds on their land. These surveys will continue to be an integral part of the Basin's noxious weed program.

Data collected at infestations are entered into national databases and distribution maps are updated. Changes in infestation size over time are monitored to determine the success or failure of control efforts.

Surveys conducted in 2007 documented 29 new weed sites on the LTBMU, for a total of 342 weed sites. Of these sites, 81 are located on urban lots and 261 are located on general Forest Service land. Monitoring in **2007** documented a total of **72.7 gross acres** and **5.6 infested acres** of noxious weeds. **The acres at risk (protected by treating the infestations) ultimately are equal to the bulk of the open land acreage in the Basin,**

since – left untreated – the infestations would eventually affect all open land. The number of “infested” acres takes into account the percent cover of the weed species within the occurrence boundary (i.e. “gross” area). In 2006, we had a total of 82.6 gross acres and 4.6 infested acres. The monitoring results show a decrease in gross (by 9.9 acres) and an increase in infested areas (by 1 acre). This increase in infested acres could be due to a few factors; the first contributing factor, being that a number of sites were submerged under water last year and infested acres for those sites didn’t get recorded; the second contributing factor, is the resistance of some weed populations to manual control methods (see Chemical Control of Noxious Weeds Proposal); finally, treatments were just initiated at new sites. SNPLMA contributions have helped to **reduce the gross acres of noxious weeds by 37% and infested acres by 13% since 2005** even with the addition of new infestations found each year. SNPLMA contributions have additionally facilitated the **complete eradication of noxious weeds at 34 sites** (sites are considered eradicated when there are no occurrences for 3 consecutive years).

Manual control of noxious weeds is achieved through SNPLMA funds, Forest Service base funds, Special Use Permittee contributions, and volunteer hours. SNMPLA funds on average contribute to 85% of this program and treats about 76.5 gross acres. It helps fund the educational program, which includes training Forest Service employees on identification of invasive species, putting on training sessions which are open to the public, staffing educational booths, creating and distributing educational pamphlets, signage, organizing weed pull events, and coordinating weed tours with partners. SNPLMA also pays for the Noxious Weed Coordinator to inspect gravel pits that will likely be used to import fill material to the Basin. The Forest Service contributes on average 10% to this program through base funding, which treats about 9 gross acres a year. It pays for the staffing at the quarterly LTBWCG (Lake Tahoe Basin Weed Coordination Group) meetings and Forest Service Database maintenance. The other 5% comes from different sources including Special Use Permittees contributions (cabin owners, resort operators, etc.) and volunteers (Tallac Restoration Volunteers, school programs, other non-profit organizations). This contributes to the treatment of 4.5 gross acres and includes Special Uses Permittees and volunteers (~100 hours annually). Note that just considering the urban lot acreage (and not even counting the adjacent lands that would be affected by the spread of noxious weeds from the urban lots), the acres benefitted (protected) are in the high hundreds to low thousands.

Round 9 SNPLMA funds will pay to manually treat 70 acres of noxious weeds; purchase a portable washing station; maintain the educational program; staff two seasonal employees to treat noxious weed sites; pay for the Noxious Weed Coordinator to put on training sessions, inspect gavel pits, map known weed locations, update databases, train and supervise seasonal staff. Round 9 will additionally fund monitoring and treatment of noxious weeds within the area affected by the Angora Fire. Previous rounds treated an average 70 acres a year. Round 7 will additionally fund an aquatic survey of Fallen Leaf Lake for Eurasian water milfoil, with follow-up surveys conducted with Round 9 funding. Future SNPLMA rounds will likely see a steady decrease in funding requests for manual weed control efforts, as the chemical / herbicide weed control program (see Herbicide Control of Noxious Weeds proposal) is incorporated into the Noxious Weeds Program and the acres infested decrease.

Describe the goals and objectives of the project (those applicable ONLY to this Round 9 project):

- Decrease the 72.7 gross acres of noxious weed infestations on National Forest System lands through an integrated treatment approach.
- Monitor infestations to determine changes in size, density, and distribution over time.
- Locate new infestations early on and apply manual treatments to prevent and/or control spread. We try to treat all high priority sites at least twice a season, medium priority sites are treated annually and low priority sites are visited annually. Priority is based on the ability to control the species manually, the abundance of the species in the Basin, and its priority with the LTBWCG.
- The LTBWCG has targeted aquatic weeds and continues to treat them manually. This proposal continues with the monitoring efforts (not treatment) for aquatic weeds and focuses on public education and prevention. A separate proposal for treatment will be submitted.
- Adaptively manage weed treatments by varying the treatment approach, timing, or application frequency, based on monitoring data.
- Work cooperatively with agencies and landowners to coordinate weed control efforts. Including members of the LTBWCG, volunteers, Special Use Permittees, and Forest Service staff.
- Increase public and staff awareness of invasive weeds, through training sessions, brochures, weed tours, and similar activities.

Describe the anticipated project accomplishments (i.e. products or identifiable environmental benefits being produced or implemented under this project):

Manually treat 70 gross acres of noxious weed occurrences on the LTBMU, which will decrease both the size and number of infestations. Survey an additional 30 acres and focus on early detections of infestations, which will increase the effectiveness of eradication efforts. Public awareness will continue to increase as a result of outreach and education efforts. Weed sites will continue to be inventoried, monitored, and mapped and data will be entered into the appropriate databases. An annual report and maps with noxious weeds information will be produced and made available to the public. A portable vehicle wash station will be purchased to use on projects likely to import or export noxious weeds. Vehicles are known vectors of noxious weeds, washing vehicles entering and leaving project sites will help to prevent the introduction and spread of noxious weeds.

Describe the “readiness” of this project to move forward (urgency, capacity, capability, environmental documentation etc.):

The 2007 field season marked the sixth year that the Lake Tahoe Basin Management Unit has inventoried, monitored, and treated noxious weeds on National Forest Service lands in the Basin. The proposed project is a continuation of these efforts; therefore it is ready to proceed and does not require environmental documentation.

Describe partnerships for this project. (if applicable, project should identify partner funding [committed/secured] and how it is integrated into the project)

LTBMU botany staff coordinates with the Lake Tahoe Basin Weed Coordinating Group. This group focuses on efforts to control noxious weeds in the Lake Tahoe Basin by meeting quarterly to discuss our programs, keeping partners updated on top priority noxious weed issues and creating a network of partners that correspond regularly. The LTBWCG works under a Memorandum of Understanding (MOU) that is revisited every five years. The LTBWCG focuses on coordinating control efforts, new noxious weed sites, containment progress, interagency site mapping, threshold standards, targeted species, and action plans. The LTBWCG has managed to eradicate yellow star thistle in the Basin; reduce the infestations of tall whitetop, spotted knapweed, diffuse knapweed, Canada thistle, & Linaria species; and responded to a new occurrence of skeleton weed. The LTBWCG voted on action plans for 2008 and unanimously voted Basin wide survey & detection of noxious weeds as the number one priority.

We also partner with non-profit organizations (Tallac Restoration Volunteers, Echo Lakes Environmental Fund, and similar groups) and Special Uses Permittees. In addition to external partnerships, the Noxious Weed Group partners with the LTBMU Urban Lots Program and the Interpretive Services Program to control noxious weeds on National Forest System Lands in the Lake Tahoe Basin.

Describe the project monitoring that will be implemented as part of this project including:

1) The questions the monitoring program is designed to answer

- What is the status of noxious weed infestations throughout the LTBMU?
- Are the gross and infested acres of weed infestations reduced over time in response to manual control treatments?
- What is the optimal mix of manual weed control efforts and use of chemicals / herbicides to control noxious weeds?

2) The monitoring approach

The following monitoring program has been developed: Each documented weed infestation is visited at least once a year. The length and width of the infestation is recorded, as well as the percent cover of the weed within the infestation. The weed occurrence is mapped with a GPS unit to document its exact location. If monitoring demonstrates that the infestation is decreasing in size, manual treatment continues until the weed is eradicated. If monitoring shows that the infestation is increasing in size, then a different treatment approach (e.g., herbicide application) may be evaluated and employed.

3) Whether this project monitoring fits into a larger monitoring or research program

This project is part of the LTBMU 5-year Adaptive Management Monitoring Plan, which outlines efforts to monitor various habitats and restoration efforts. The overriding purpose

of this program is to determine the success of restoration projects, which includes manual weed treatments, in order to improve upon future projects.

Official monitoring of invasive species on National Forest System lands within the Basin began when the invasive weed program was initiated in 2002. FY08 represents the sixth year of the invasive weed program. Each year infestations are revisited and monitored for changes in distribution and size. Data are collected and entered into national databases, as well as excel spreadsheets, to show changes over time. Then distribution maps are updated and reviewed. Changes in infestation size over time are monitored to determine the success or failure of control efforts.

Additionally, the LTBMU works cooperatively with the LTBWCG in a collective monitoring report that is updated annually. This report includes changes in distribution and size of targeted noxious weeds, as well as a cohesive map of the Lake Tahoe Basin. This monitoring effort helps the group decide how to prioritize treatments and control measures for invasive species in the Basin for all partners in the LTBWCG.

Describe these two items which will be considered along with the above project monitoring information by the Tahoe Science Consortium related to research and monitoring resource areas and the effectiveness of environmental restoration activities:

- 1) Describe the specific goals and objectives of the project and describe how fulfilling those objectives will contribute to the achievement of one or more environmental thresholds.**
- 2) Describe the risk to the environment from failure of the proposed project (i.e. if the project fails what is the environmental consequence).**

The specific goal of this project is to reduce noxious weed infestations within the Basin. By fulfilling this objective we will be contributing to multiple environmental thresholds.

Water Quality (W)

Noxious weeds have been shown to increase rates of erosion due to changes in root structure, which affects water quality because of increased rates of sediment input. Controlling noxious weeds will help restore the environment and reduce sediment input.

Soil Conservation (SC)

Noxious weeds are known to change the diverse native ecosystem which contributes to a healthy soil structure to a single species system that degrades the natural soil structure. By controlling noxious weeds, the soil structure can return to its natural state.

Wildlife (W)

Noxious weeds reduce species diversity within healthy ecosystems which can negatively impact wildlife species that depend on a diverse ecosystem in order to thrive. By controlling noxious weeds, diversity can return to normal levels and support wildlife dependent upon native plants in order thrive.

Vegetation (V)

Noxious weeds negatively impact native plants through direct competition for nutrients, light, and water, which can lead to a decrease in species diversity within native plant communities. By controlling noxious weeds and reducing the competition in the environment, species diversity can return to normal levels.

Scenic Resources (SR)

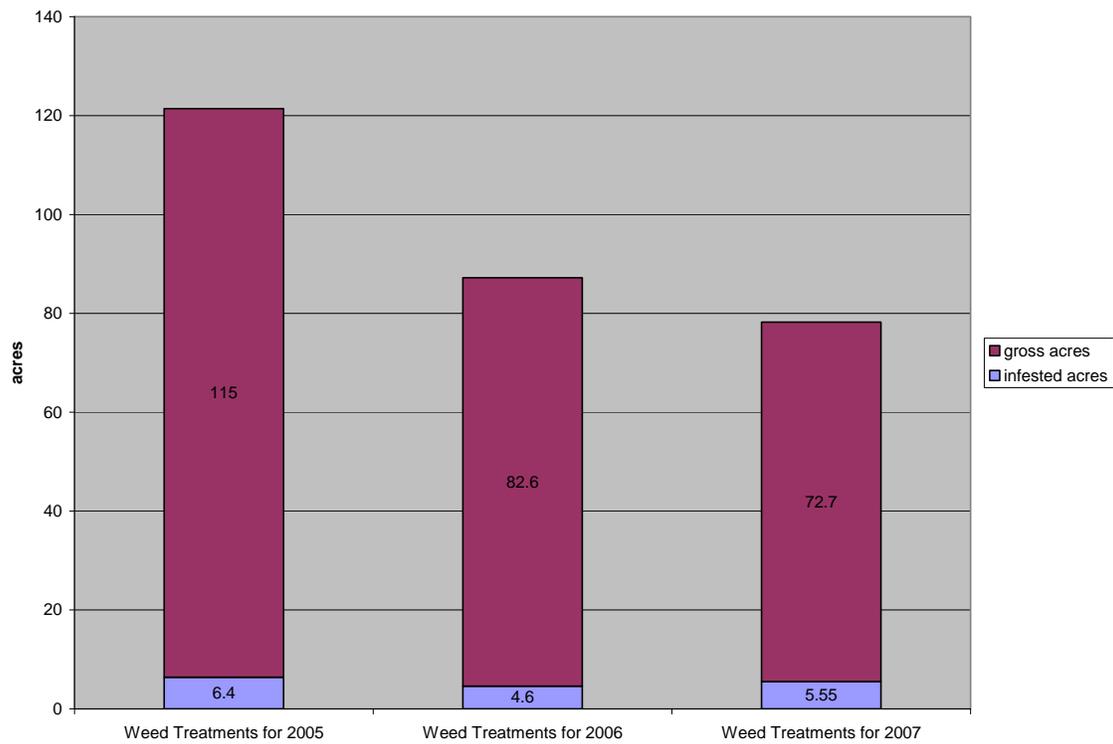
Noxious weeds are known to reduce diversity, which can have a negative visual impact. Removal of noxious weeds helps to restore species diversity and can increase the visual quality of the environment.

If the project were to fail, existing invasive weed infestations would spread more rapidly and newly introduced invasive species would form new infestations that could also expand unchecked. These populations would have a significant impact on native vegetation and consequently wildlife, by reducing the amount of native plants available for wildlife consumption and habitat. Water quality/availability, soil composition, and scenic resources would also be negatively impacted by increased weed infestations as described above.

Describe how the project results will be communicated and made available to the public.

Educational outreach will continue to occur at Earth Day and other public events. Posters will be submitted to local symposia, complete with monitoring results. An annual LTBMU weed report will continue to be prepared and made available upon request. The LTBMU will continue to work with the Lake Tahoe Basin Weed Group, which develops weed brochures, newspaper articles, and other information to alert the public of the problems that noxious weeds create. Signage will continue at targeted areas throughout the Basin. Maps and shape-files with noxious weed information will be available via the Forest Service web page, through the LTBWCG annual map, and on request.

Gross and Infested Acres 2005 through 2007



Reduction in gross acres, shown above, is though manual control efforts made possible with SNPLMA funding.

Noxious Weed Sites for 2007

